REMARKS

This Amendment is submitted in response to the Non-Final Office Action mailed on September 10, 2009. No fee is due in connection with this Amendment. The Director is authorized to charge any fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712174-00470 on the account statement.

In the Office Action, Claims 36, 38-39, 41-43, 45 and 47-51 are rejected under 35 U.S.C. §103(a) as being unpatentable over WO 02/084631 A1 to Hayashi et al. as evidenced by U.S. Patent No. 6,872,635 B2 to Hayashi et al. ("*Hayashi*") in view of U.S. Patent No. 5,426,342 to Nakamura et al. ("*Nakamura*") and U.S. Patent No. 6,613,610 to Iwafuchi et al. ("*Iwafuchi*"). In response, Applicants have further amended independent Claims 36, 39 and 41, as mentioned above. In view of the amendments and/or for at least the reasons set forth below, Applicants respectfully submit that the cited references fail to disclose or suggest each and every element of the present claims.

Independent Claims 36, 39 and 41 have been similarly amended to recite, at least in part, a method comprising forming a temporary adhesion layer on a surface of a first substrate, and arranging a plurality of devices on the temporary adhesion layer, and embedding devices into a pressure sensitive adhesive layer provided on a second substrate by positioning the first and second substrates in close proximity thereof such that the *temporary adhesion layer comes into contact with the pressure sensitive adhesive layer* and the devices are *entirely embedded within the pressure sensitive adhesive layer* such that the *plurality of second devices become substantially flush with the surface of the pressure sensitive adhesive layer*, wherein the entire pressure sensitive adhesive layer is in an uncured state and the devices are light emitting diodes. The amendments are supported, for example, on pages 20-21 of the Specification, and as shown in Figs. 2-4.

An image display unit using light emitting devices such as light emitting diodes ("LEDs") is produced at a low cost by manufacturing a large number of LEDs from a single wafer. (See, Specification, paragraph 5, lines 1-4). Prior art display units are manufactured by rearranging a plurality of devices formed on a device formation substrate onto an apparatus substrate. (See, Specification, paragraph 6, lines 1-4). The devices are first transferred from the

device formation substrate to an adhesive layer provided on a temporary holding substrate and then transferred from the temporary holding substrate to the apparatus substrate. (See, Specification, paragraph 6, lines 4-9). In transferring the devices from the temporary holding substrate to the apparatus substrate, an adhesive layer is provided between the temporary holding substrate and the apparatus substrate to adhere the two substrates to each other. (See, Specification, paragraph 7, lines 1-7). Before stripping the two substrates from each other, the adhesive layer is cured while the devices are embedded in it. (See, Specification, paragraph 7, lines 7-16). Due to the strong adhesion between the two substrates, stripping the two substrates from each other may cause damage to the substrates. (See, Specification, paragraph 7, lines 7-13). Furthermore, because the adhesive layer is cured or hardened before stripping, the apparatus substrate is damaged such that it may be difficult to subsequently transfer devices onto the same apparatus substrate. (See, Specification, paragraph 7, lines 14-18).

Therefore, the presently claimed invention provide a method of manufacturing an image display unit by embedding devices arranged on a first substrate into a pressure sensitive adhesive layer provided on a second substrate and stripping the devices from the first substrate before the pressure sensitive adhesive layer is hardened or cured, and where the entire pressure sensitive layer remains uncured for successive device transfer steps. The plurality of devices are arranged on the first substrate by bringing the devices into contact with a temporary adhesion layer provided on the first substrate. (See, Specification, paragraph 12, lines 1-5). The plurality of devices are collectively embedded within the pressure sensitive adhesive layer by positioning the first and second substrates in close proximity to each other such that the plurality of devices penetrate the surface of the pressure sensitive adhesive layer. (See, Specification, paragraph 10, lines 6-10; Figure 3). Because the devices are embedded within the pressure sensitive adhesive layer rather than merely affixed to its surface, the devices may be mounted onto the second substrate independently of their shapes. (See, Specification, paragraph 10, lines 1-6). Furthermore, by stripping the devices from the first substrate while the entire pressure sensitive adhesive layer is still in an uncured state, the force required to separate the first and second substrates may be further reduced. (See, Specification, paragraph 10, lines 13-19). It is also possible to embed additional devices into the pressure sensitive adhesive layer by embedding the additional devices within the adhesive layer and stripping the additional devices from the

substrate on which they are arranged before any portions of the pressure sensitive adhesive layer is cured. (See, Specification, paragraph 11, lines 1-6).

In contrast, the cited references fail to disclose or suggest every element of the present claims because they fail to disclose or suggest forming a temporary adhesion layer on a surface of a first substrate, and arranging a plurality of devices on the temporary adhesion layer, and embedding devices into a pressure sensitive adhesive layer provided on a second substrate by positioning the first and second substrates in close proximity thereof such that the *temporary adhesion layer comes into contact with the pressure sensitive adhesive layer* and the devices are *entirely embedded within the pressure sensitive adhesive layer* such that the *plurality of second devices become substantially flush with the surface of the pressure sensitive adhesive layer*, wherein the entire pressure sensitive adhesive layer is in an uncured state and the devices are light emitting diodes, as recited in amended Claims 36, 29 and 41.

In this regard, in Fig. 2D of *Hayashi*, substrate 4 is not brought together with substrate 1 such that adhesive layer portions 5 come into contact with the adhesive layer 2, as claimed. Moreover, the devices 3 or 3a are not entirely embedded within the adhesive layer 2 such that the plurality of "second devices" 3a become substantially flush with the surface of the adhesive layer 2, as claimed. With regard to the *Nakamura* reference, the Office Action merely relies on *Nakamura* for the alleged disclosure of a "heat sensitive and pressure sensitive adhesive layer," and thus fails to cure the deficiencies of *Hayashi*, even assuming the references are properly combinable. (See, Office Action, pg. 3). With regard to the *Iwafuchi* reference, as shown in Figs. 7 and 8, substrate 51 does not include a temporary adhesion layer formed thereon, as presently claimed. Rather, in order to release substrate 51 from the light emitting diodes, the sapphire substrate 51 is irradiated with a UV laser to decompose the second conductive type cladding layer 52 into nitrogen gas and metal gallium to weaken the bond between same. (See, *Iwafuchi*, col. 22, lines 1-14). Moreover, as shown in Figs. 6-8 of *Iwafuchi* (as referenced on page 17 of the Office Action), the devices are not substantially flush with the surface of adhesive material layer 61. As such, *Iwafuchi* fails to cure the deficiencies of *Nakamura* and *Hayashi* as discussed above, even assuming that all of the references are properly combinable.

Accordingly, Applicants respectfully request that the rejection of Claims 36, 38-39, 41-43, 45 and 47-51 under 35 U.S.C. §103(a) to *Hayashi*, *Nakamura* and *Iwafuchi* be withdrawn.

In the Office Action, Claims 40 and 44-46 are rejected under 35 U.S.C. §103(a) as being unpatentable over WO 02/084631 A1 to Hayashi et al. as evidenced by *Hayashi* in view of *Nakamura*, and further in view of U.S. Patent Application No. 2003/0227253 to Seo et al. ("*Seo*") and *Iwafuchi*. As discussed previously, *Hayashi*, *Nakamura* and *Iwafuchi* fail to disclose or suggest forming a temporary adhesion layer on a surface of a first substrate, and arranging a plurality of devices on the temporary adhesion layer, and embedding devices into a pressure sensitive adhesive layer provided on a second substrate by positioning the first and second substrates in close proximity thereof such that the temporary adhesjon layer comes into contact with the pressure sensitive adhesive layer and the devices are entirely embedded within the pressure sensitive adhesive layer such that the plurality of second devices become substantially flush with the surface of the pressure sensitive adhesive layer, wherein the entire pressure sensitive adhesive layer is in an uncured state as required, in part, by independent Claims 39 and 41, from which Claims 40 and 44-46 depend. The Examiner further relies on *Seo* merely for the disclosure of driving methods that include impressing a voltage on the devices through the first and second electric wirings. (See, Office Action, page 14). Thus, Applicants respectfully submit that *Seo* fails to remedy the deficiencies of *Hayashi*, *Iwafuchi* and *Nakamura*.

Accordingly, Applicants respectfully request that the rejection of Claims 40 and 44-46 under 35 U.S.C. §103(a) to *Hayashi*, *Nakamura*, *Seo* and *Iwafuchi* be reconsidered and withdrawn.

In the Office Action, Claims 36, 38-51 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-11 of copending Application No. 11/467,007 in view of WO 02/084631 A1 to Hayashi et al. as evidenced by *Hayashi*. Applicants have amended Claims 36, 39 and 41, and believe the provisional rejections of Claims 36, 38-51 over Claims 1-11 of copending Application No. 11/467,007 have been overcome, for at least the reasons discussed above.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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Dated: November 11, 2009